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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/549,877

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Miles Stephen Cain

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EXAMINER

CHANG, VICTOR S

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

06/04/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/549,877	Applicant(s) CAIN ET AL.	
	Examiner Victor S. Chang	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 20-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 20-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. Applicant's remarks filed on 4/17/2008 have been carefully considered. Claims 1-3 and 20-47 are active.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The grounds of rejection have been updated as set forth below.

Claim Rejections - 35 USC § 103

4. Claims 1-3 and 20-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. [US 2002/0120972 A1] in view of Furuno et al. [US 6200195 B1].

Nakamura's invention relates to a clothing (fabric) with a sag-preventive (non-slip or adhesive) member [0001], such as socks, stockings, brassieres, under short pants, pantyhose, swimming wear, sport wear, etc. The sag-preventive member may be installed on the inner surface of the stocking in the vicinity of the opening, or on the inner circumferential surface of the brassiere [0028]. Fig. 2 shows that the sag-preventive member is installed by laminating a layer sheet 1, which comprises a flexible hot-melt film layer 11 and an adhesive layer 12, on the clothing layer 2 under a heating device 4. The film layer 11 is melted and welded on the clothing [0052-0053]. Useful adhesive layer may be polymeric materials, such as silicone, etc. [0037]. The hot melt flexible film layer avoids exuding a liquid silicone rubber on the outer surface of the clothing thereby maintaining its appearance [0066].

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For claims 1 and 2, Nakamura's cloth layer 2, flexible hot-melt film layer 11, and adhesive layer 12 read on the fabric layer, barrier layer, and adhesive layer of the claimed invention. The liquid silicone rubber is interpreted as uncured silicone gel prior to heat lamination. Nakamura lacks a teaching that the barrier layer is a silicone elastomer. However, Furuno's invention relates to an adhesive pad for adhering to human skin [col. 1, lines 5-7]. The adhesive pad is formed by 1) initially curing a silicone rubber to a semi-cured stage capable of shape retention; then 2) integrally curing the semi-cured silicone rubber layer and an uncured silicone gel in a heated mold. Fig. 2 shows that the cured article 1 comprises a pad body of silicone rubber (elastomer) layer 2 and a cured silicone gel adhesive layer 3 [col. 1, lines 64-66 and col. 2, lines 32-48]. It would have been obvious to one of ordinary skill in the art to substitute the bonding film layer 11 and adhesive layer 12 of Nakamura with the semi-cured silicone rubber layer (curable barrier layer) and uncured silicone gel layer of Furuno, with a reasonable expectation of success at the time the invention was made, because the selection of a functionally equivalent known material based on its suitability for its intended use supported a *prima facie* obviousness determination. Finally, since Nakamura teaches that the hot melt flexible film layer avoids exuding a liquid silicone rubber on the outer surface of the clothing, and Furuno teaches discrete cured layers, the combined teachings of prior art clearly read on the term "an impervious barrier layer".

For claim 3, a workable melt viscosity of the curable silicone rubber layer is deemed to be an obvious routine optimization to one of ordinary skill in the art of hot melt lamination, motivated by the desire to avoid extruding the low viscosity silicone gel on the outer surface of the clothing.

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For claims 20-31, since the combined teachings of prior art render the subject matter of the instant invention obvious, and they are of the same use, workable thicknesses of the barrier layer and adhesive layer are deemed to be obvious routine optimizations for the same utility.

For claims 32-47, Nakamura relates to a clothing (fabric) with a sag-preventive member, including brassieres, as set forth above.

Response to Arguments

5. Applicants argue at Remarks pages 2-3 that the examiner's interpretation of liquid silicone layer as uncured adhesive silicone gel prior to heat lamination directly contradicts the disclosure of Nakamuro, because

"Paragraph [0046] of Nakamura explains the application of a mixture on the film layer to create layer sheet 1 : "The mixture applied layer is maintained horizontal and is heated at approximately 80 degrees (centigrade) for approximately 5 minutes, so that the applied polyurethane adhesive layer may be cured." Paragraph [0050] explains sewing the layer sheet (including the cured mixture applied layer) to the cloth 2. As an alternative to sewing, paragraphs [0052] and [0053] explain installation of the layer sheet 1 onto the cloth 2 by heating. There is no mention in the specification of this curing being done only when the layer sheet is sewn onto the cloth as asserted in the Office Action."

However, Nakamura teaches two methods for installing the sag-preventive member to clothing: sewing and heat curing/welding. Clearly, the abovementioned pre-cured layer sheet is for sewing, not for the relied upon method of heat curing/welding. In particular, Nakamura teaches that the hot melt flexible film layer avoids exuding a liquid silicone rubber on the outer surface of the clothing thereby maintaining its appearance [0066], which necessarily infers that the liquid silicone layer is in uncured state, because a cured (crosslinked) silicone would not flow, nor exude.

Applicants argue at page 3 that

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“Nakamura clearly discloses in paragraph [0036] that “[t]he layer sheet has vent holes which maintain breathable condition” without limiting it to a particular method of attaching the layer sheet to the cloth. A layer sheet with vent holes cannot be considered impervious. In addition, there is no need for the layer sheet of Nakamura to be impervious because the mixture applied layer is cured before the layer sheet is applied to the cloth. With the adhesive already cured, there is no chance of adhesive being absorbed into the cloth in Nakamura through the vent holes.”

However, a careful review of the specification page 15 reveals that the term “impervious” is merely used to describe the required function of the barrier layer:

“The thickness of the barrier layer is preferably chosen to be sufficient to ensure that an impervious layer is formed.”

Since Nakamura expressly teaches that the hot melt flexible film layer avoids exuding a liquid silicone rubber on the outer surface of the clothing thereby maintaining its appearance, the examiner maintains that Nakamura’s film layer (barrier layer) provides the “impervious” function of the claimed invention. Further, nowhere Nakamura teaches that the vent holes must present in the layer sheet prior to installation, it would have obvious to one of ordinary skill in the art to form the vent holes after the installation of the sag-preventive member, motivated by the desire to obtain an improved breathability [0036]. There is no reason whatsoever to believe that Nakamura would teach away from providing an impervious film layer.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794

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